

## RM 5–FM: Exercise and Fitness Development Investigation: Myth or Fact?

### NOTE TO TEACHER

Reword some of the Myth statements into Fact statements and remove the word *Myth* from each card, as students have to determine whether each statement is a myth or a fact.

**Myth:**

**“No pain, no gain.”**

**Fact:** Exercise should never hurt, and it does not have to hurt to be effective. When we begin an exercise program we may experience some muscle soreness, but that is quite different from pain. Pain is an indicator that something is wrong and requires attention. Muscle soreness after exercise even has a name: DOMS (delayed onset muscle soreness). This soreness comes from using improper exercise techniques and improperly applying the principles of training. It will go away after a few days. In fact, as their bodies become fitter and adapt to increasing intensity levels, many people feel only minor muscle soreness, or none at all.

**Myth:**

**“Spot” reducing is possible.**

**Fact:** Many people think that if they concentrate exercise on a specific muscle group, the layers of fat over that particular area will gradually disappear, but this perception is false. The body does not use the body fat covering the muscles being used. The body uses fat in a pattern that is determined by our genes, age, and hormones. Overall body fat must be reduced to lose fat in any particular area.

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<p><b>Myth:</b></p> <p><b>Females will develop large muscle with resistance training.</b></p>	<p><b>Fact:</b> Weight lifting or any form of resistance training is essential for both men and women to maintain their muscle tissue. Strong muscles and bones help minimize the risk of disabilities and diseases such as osteoporosis. Increasing muscle size for both men and women takes years of highly specialized and intense training. It is extremely difficult for women to increase muscle size because they lack the hormone testosterone (approximately one-third that of men), which makes it easier for men to accomplish this adaptation to exercise. Many of the muscular women seen in magazines acquire their muscle through a program of steroid use and hormone manipulation. Females can achieve significant increases in strength without the concern of increased muscle size.</p>
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<p><b>Myth:</b></p> <p><b>Muscle will turn to fat when exercising stops.</b></p>	<p><b>Fact:</b> This myth resurfaces repeatedly. In reality, muscle cells and fat cells are completely different in structure and function. A muscle cell cannot become a fat cell, and vice versa. If muscle did convert to fat through disuse, everyone who has ever had a cast due to a broken bone would find a fat mass once the cast was removed. On the contrary, the limb is actually smaller due to atrophy of the muscle tissue through disuse.</p>
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<p><b>Myth:</b></p> <p><b>Steroid use is the best way to develop massive muscles.</b></p>	<p><b>Fact:</b> Use of steroids is a dangerous way to increase muscle mass, as it has been linked to numerous health issues, such as acne, alteration of sex organs, and some forms of cancer, to name a few. While it may take a little longer to increase muscle mass with a balanced eating plan, proper rest, and a well-designed resistance-training program, this approach is much safer than developing muscle mass with steroid use.</p>
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<p><b>Myth:</b></p> <p><b>Train abdominals every day.</b></p>	<p><b>Fact:</b> The abdominal muscle group responds to exercise the same way that all other muscles in the body respond. Every exercised muscle needs time to rebuild and recover from exercise, and the abdominal group is no different. The muscles of the core (abdominals and back) are activated during most activities as stabilizers for a desired action. Therefore, the abdominal muscles need only be exercised two to three times per week.</p>
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<p><b>Myth:</b></p> <p><b>Stretching prevents injuries.</b></p>	<p><b>Fact:</b> Stretching helps maintain or increase flexibility of the joints so that skills performed at a fast pace can easily move through a greater range of motion. Studies indicate, however, that most injuries occur within the normal range of motion. Calzadilla reports that, after evaluating the results from six studies, “researchers at the U.S. Centers for Disease Control and Prevention could not find any correlation between stretching and injury prevention . . . Warming up prior to exercise and increasing blood flow to the muscles is actually more conducive to injury prevention [than stretching].”</p> <p><b>Reference</b> Calzadilla, Raphael. “10 Fitness Myths Exposed!” <i>Diet and Fitness Blog</i>. 20 Feb. 2008. eDiets.com. &lt;<a href="http://blog.ediets.com/2008/02/10-fitness-myths-exposed.html">http://blog.ediets.com/2008/02/10-fitness-myths-exposed.html</a>&gt; (14 July 2008).</p>
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<p><b>Myth:</b></p> <p><b>During training, we can eat anything.</b></p>	<p><b>Fact:</b> The only way to have an active and healthy lifestyle is to follow a healthy physical activity program and eat a healthy diet. When following an exercise or activity plan, it is important to eat in a way that supports the activity. The type and intensity of activity may necessitate an increase or a decrease in certain nutrients. By exercising, we increase our caloric expenditure slightly, but not enough to forgo the principles of healthy eating. Rewarding ourselves for reaching a goal is certainly a reasonable action, but taking anything to excess is a recipe for disaster.</p>
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**Myth:**

**Low-intensity aerobic exercise is the best way to lose fat.**

**Fact:** Low-intensity aerobic exercise is often valued for its fat-burning characteristic and, therefore, its importance for weight management. Although low-intensity aerobic exercise favours fat as an energy source, increasing the intensity of exercise makes the greatest difference when it comes to fat loss. To lose body fat, we need to expend more calories per day than we consume. Higher intensity exercises expend more calories per unit of time. The secret to fat loss is to create a slight imbalance in favour of expenditure over consumption on a daily basis, and fat loss will gradually take place. A reasonable rate of fat loss that does not drastically compromise a person's lifestyle is about half a kilogram to one kilogram per week. A difference of 500 calories per day represents a loss of half a kilogram per week.

**Myth:**

**Running a certain distance burns the same number of calories as walking the same distance.**

**Fact:** Based on the findings of a group of Syracuse University researchers, "we now know the relative NCB [net calorie burn] of running a mile in 9:30 versus walking the same mile in 19:00. [The] male subjects [in the research study] burned 105 calories running, 52 walking; the women, 91 and 43. That is, running burns twice as many net calories per mile as walking. And since you can run two miles in the time it takes to walk one mile, running burns four times as many net calories per hour as walking" (Burfoot).

**Reference**

Burfoot, Amby. "How Many Calories Are You Really Burning?" *Nutrition and Weight Loss*. 18 July 2005. Runner's World. <[www.runnersworld.com/article/0,7120,s6-242-304-311-8402-0,00.html?cm\\_mmc=nutrition--2007\\_11\\_22--nutrition-Post-Feast%20Run%20vs%20Post-Feast%20Stroll](http://www.runnersworld.com/article/0,7120,s6-242-304-311-8402-0,00.html?cm_mmc=nutrition--2007_11_22--nutrition-Post-Feast%20Run%20vs%20Post-Feast%20Stroll)> (28 May 2008).

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<p><b>Myth:</b></p> <p><b>Holding weights during a walk or a run increases the exercise benefits.</b></p>	<p><b>Fact:</b> Some people carry light, hand-held weights when they walk or run. Others strap weights around their ankles. This practice slows people down, thus reducing the benefits gained from the aerobic exercise. Also, the weight added is so small that it has little strength-building benefits.</p>
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<p><b>Myth:</b></p> <p><b>Exercise burns lots of calories and offsets a high-calorie treat.</b></p>	<p><b>Fact:</b> Exercise actually burns few calories relative to the calories consumed in some food portions (e.g., one milk chocolate bar = 250 calories = 30 minutes of singles tennis). A basic calorie-burning guideline is that heavier people burn more calories than lighter individuals for the same amount of work. According to William Evans of the University of Arkansas for Medical Sciences, “studies show that after people lose weight, the best predictor of maintaining the weight loss is whether they exercise regularly” (Liebman).</p> <p><b>References</b></p> <p>Liebman, Bonnie. “Exploding Ten Exercise Myths.” <i>Nutrition Action Healthletter</i> (Jan./Feb. 2000): n.p. Available on the Center for Science in the Public Interest website at &lt;<a href="http://www.cspinet.org/nah/2_00/ten_myths04.html">www.cspinet.org/nah/2_00/ten_myths04.html</a>&gt;.</p> <p>Nutribase. <i>Exercise Calorie Expenditures</i>. &lt;<a href="http://nutribase.com/exercala.htm">http://nutribase.com/exercala.htm</a>&gt; (14 July 2008). This website provides charts indicating how many calories may be expended while performing a range of activities (sorted by activities and intensity levels).</p>
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<p><b>Myth:</b></p> <p><b>A person cannot be fit and fat.</b></p>	<p><b>Fact:</b> Individuals who are overweight or obese can have good cardiovascular health as long as they remain active and possess a reasonable level of fitness. Being over-fat does not prevent the fitness development response to exercise training.</p>
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<p><b>Myth:</b></p> <p><b>Exercise is a waste of time unless it is intense and done for a long time.</b></p>	<p><b>Fact:</b> According to the Public Health Agency of Canada, adolescents should try to get at least 90 minutes of physical activity each day, of which 30 minutes should be at a vigorous intensity level and 60 minutes should be of moderate intensity, to stay healthy or to improve health (<i>Canada's Physical Activity Guide for Youth 2</i>). Exercising or training too much is very time consuming and may cause a state of overtraining, which is counter to a healthy lifestyle. Every activity done at a moderate to vigorous intensity level will contribute to overall health and can be accumulated in as little as 10-minute bouts.</p> <p><b>Reference</b> Public Health Agency of Canada. <i>Canada's Physical Activity Guide for Youth</i> Ottawa, ON: Public Health Agency of Canada, 2002. Available online at &lt;<a href="http://www.phac.aspc.gc.ca/pau-uap/fitness/downloads.html">www.phac.aspc.gc.ca/pau-uap/fitness/downloads.html</a>&gt;.</p>
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<p><b>Myth:</b></p> <p><b>Morning is the best time to exercise.</b></p>	<p><b>Fact:</b> There is no one best time to exercise. It comes down to a matter of preference. Some people are at their best in the morning, while others fit in exercise at lunchtime or after school or work. Fitting exercise into a busy day is the main issue. The only caution may be not to exercise too close to bedtime. The body requires some time to return to a resting state.</p>
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<p><b>Myth:</b></p> <p><b>Never swim after you eat.</b></p>	<p><b>Fact:</b> This myth suggests the possibility of suffering severe muscle cramping and drowning from swimming on a full stomach. While it is true that the digestive process diverts the circulation of the blood toward the stomach and, to a certain extent, away from the muscles, the fact is that drowning caused by swimming on a full stomach has not been substantiated. As with any exercise after eating, swimming right after a big meal might be uncomfortable, but it won't cause drowning.</p>
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<p><b>Myth:</b></p> <p><b>Only athletes exercise.</b></p>	<p><b>Fact:</b> More and more people are deciding to begin an exercise or activity program. Athletes exercise specifically to improve their ability to succeed in their chosen sport. Non-athletes most often exercise to improve or maintain general health and fitness and to experience the many positive feelings associated with physical activity.</p>
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<p><b>Myth:</b></p> <p><b>Exercise is dangerous.</b></p>	<p><b>Fact:</b> While no activity is without its dangers, the benefits of exercise far outweigh the risks. Weight lifting, for example, can lead to injuries, usually resulting from inexperience, improper form, or doing too much too soon. Such injuries are usually avoidable. Anyone beginning an exercise program after being sedentary should do so slowly, beginning with low intensity and frequency and gradually increasing it. The body will adapt to the new stresses over time, making it possible to exercise harder more frequently.</p>
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<p><b>Myth:</b></p> <p><b>Exercise is not enjoyable.</b></p>	<p><b>Fact:</b> One of the points of exercise is to enjoy the act of moving our arms, legs, and whole body—muscles, bones, joints, lungs, and heart. You may remember that feeling of enjoyment from childhood, when active play and running were part of every day. As we age, we continue to be physical persons who can find expression in physical action. Movement lets us enjoy life in a physical way.</p>
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<p><b>Myth:</b></p> <p><b>Having the right equipment and clothing is necessary to become fit.</b></p>	<p><b>Fact:</b> Having equipment to exercise is definitely not a requirement. Calisthenics exercises, such as curl-ups or push-ups using body weight, provide opportunities for great workouts, with the freedom to exercise anywhere and at any time, while costing nothing. Although exercise clothing is comfortable and fashionable, it is not needed for activity participation. The most important thing about exercise is doing it. Find a way to be active and healthy, and fitness benefits will follow.</p>
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**Myth:**

**Using a sweatsuit in the sauna helps burn more fat.**

**Fact:** Many people mistakenly believe that weight loss equals fat loss. People continue to use sweatsuits or garbage bags during exercise or in saunas in order to lose weight quickly. In this case, weight loss is water loss that will be gained back as soon as the individuals eat or drink again. This myth comes mainly from wrestling and boxing where there may be a need to shed a few pounds to make a weight class. Sweating through methods other than exercise for the purpose of weight loss is unhealthy. Sweating to lose weight poses many dangers, such as overheating (heatstroke), extreme loss of electrolytes (kidney damage/death), and cardiovascular-related emergencies.

**Myth:**

**Eating carbohydrates will make me fat.**

**Fact:** This myth confuses fat with weight. For every gram of carbohydrates stored in the body, the body also stores two to three grams of water. If a person depletes the stored carbohydrates by 100 grams, the body will also rid itself of approximately 200 to 300 grams of water. This is the basis for low-carbohydrate diets and why dieters are urged to drink more water than usual to avoid dehydration. Dieters falsely believe that they are losing fat on their diet as their weight is decreasing, when they are actually losing water weight. Once these dieters go off their diet, the body will quickly store the lost carbohydrates along with the required water, making it appear as though the weight (fat) has all returned. Hence the belief that carbohydrates make a person fat.

All food contains at least one of the three energy nutrients: carbohydrates, fats, or proteins. Carbohydrates and proteins supply four calories per gram, while fat supplies nine calories per gram.

Health Canada recommends six or seven servings of grain products per day for teens (*Eating Well with Canada's Food Guide 2*).

**References**

Health Canada. *Eating Well with Canada's Food Guide*. Ottawa, ON: Health Canada, 2007.

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These guides are available online at <[www.hc-sc.gc.ca/fn-an/food-guide-aliment/index\\_e.html](http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html)>.

